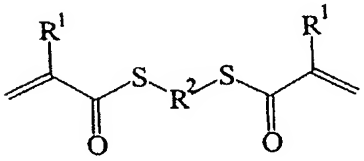
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

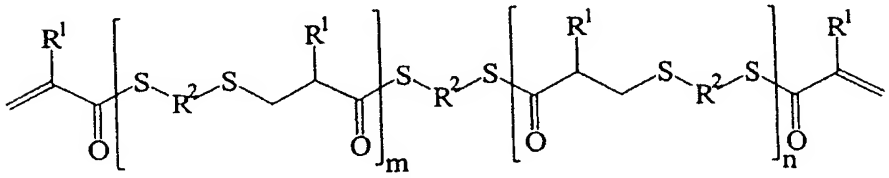
Claim 1 (Currently Amended): A mixture for preparing a transparent plastic, comprising:

a) a prepolymer prepared from compounds of the formula (I) and (II) and

from alkyl dithiols or from polythiols



(I)



(II)

wherein

each R^1 is hydrogen or a methyl radical,

each R^2 is a linear or branched, aliphatic or cycloaliphatic radical, or a substituted or unsubstituted aromatic or heteroaromatic radical, and

each of m and n, is a whole number greater than or equal to 0, wherein

$m + n > 0$,

and

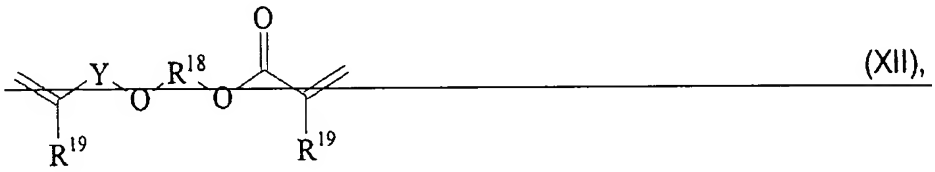
b) at least one monomer (A) capable of free-radical polymerization and having at least two methacrylate groups, and

c) aromatic vinyl compounds, and

d) a monomer selected from the group consisting of a monomer capable of free-radical polymerization and having at least two terminal olefinic groups whose reactivity differs,

e) at least one ethylenically unsaturated monomer (B) and mixtures thereof; and

f) a monomer capable of free-radical polymerization and having at least two terminal olefinic groups whose reactivity differs, of the formula (XIVa)

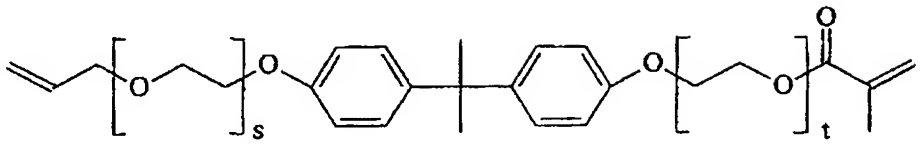


~~wherein~~

~~the radical R^{19} at opposing ends of the molecule represented by the formula (XII) is the same or different and is selected from the group consisting of a hydrogen atom, a fluorine atom, and a methyl group,~~

~~the radical R^{18} is a connecting group which has from 1 to 1000 carbon atoms,~~

~~the radical Y is a connecting group having from 0 to 1000 carbon atoms and does not contain a carbonyl group directly connected to a carbon atom of the terminal olefinic group and directly connected to the oxygen adjacent to the residue Y in formula (XII)~~



(XIVa)

wherein s and t are greater than or equal to zero and the sum s + t is in the range from 1 to 20.

Claim 2 (Previously Presented): The mixture according to Claim 1, comprising more than 10 mol%, of compounds of the formula (II) wherein m + n = 2, based on a total amount of the compounds of the formula (I), (II) and compounds obtained from alkyl dithiols or from polythiols.

Claim 3 (Previously Presented): The mixture according to Claim 1, wherein the radical R^2 of the formulae (I) and/or (II) is an aliphatic radical having from 1 to 10 carbon atoms.

Claim 4 (Previously Presented): The mixture according to Claim 1, comprising more than 5.8 mol% of compounds of the formula (II) wherein m+n= 3, based on a total amount of the compounds of the formula (I) and (II) and compounds obtained from alkyl dithiols or from polythiols.

Claim 5 (Previously Presented): The mixture according to Claim 1, comprising from 0.1 to 50 mol% of compounds of the formula (I), based on a total amount of the compounds of the formula (I), (II) and compounds obtained from alkyl dithiols or from polythiols of compounds of the formula (I).

Claim 6 (Previously Presented): The mixture according to claim 1, comprising from 1 to 40 mol% of compounds of the formula (II) wherein m + n = 1, based on a total amount of the compounds of the formula (I), (II) and compounds obtained from alkyl dithiols or from polythiols.

Claim 7 (Previously Presented): The mixture according to Claim 1, comprising compounds of the formula (II) wherein m + n > 3.

Claim 8 (Previously Presented): The mixture according to Claim 1, wherein the total content of compounds of the formula (I), (II), and (I), (II) and compounds obtained from alkyl dithiols or from polythiols is at least 5.0% by weight, based on the total weight of the mixture.

Claim 9 (Previously Presented): The mixture according to Claim 1, wherein the mixture comprises at least one monomer (A) which is copolymerizable with the prepolymers prepared from the monomers of formulas (I), (II) and compounds obtained from alkyl dithiols or from polythiols.

Claim 10 (Previously Presented): The mixture according to Claim 9, wherein the mixture further comprises di(meth)acrylates.

Claim 11 (Previously Presented): The mixture according to Claim 1, wherein the aromatic vinyl compounds comprise styrene.

Claim 12 (Canceled):

Claim 13 (Previously Presented): The mixture according to Claim 1, comprising allyl polyethylene glycol methacrylate.

Claim 14 (Canceled):

Claim 15 (Previously Presented): The mixture according to Claim 1, wherein (B) comprises 2-hydroxyethyl methacrylate.

Claim 16 (Previously Presented): A process for preparing a transparent plastic, comprising: polymerizing the mixture of Claim 1.

Claim 17 (Previously Presented): A transparent plastic prepared by the process of Claim 16.

Claim 18 (Previously Presented): The plastic according to Claim 17, having a refractive index of the plastic to DIN 53491 is greater than 1.59.

Claim 19 (Previously Presented): The plastic according to Claim 17, having a Abbe number of the plastic to DIN 53491 is greater than 36.

Claim 20 (Previously Presented): The plastic according to Claim 17, wherein an average diameter of a ball which does not damage the test specimen in a falling ball test is > 18.

Claim 21 (Previously Presented): The plastic according to Claim 17, having a transmittance of the plastic to DIN 5036 is ≥ 89%.

Claim 22 (Previously Presented): The plastic according to Claim 17, having a glass transition temperature is greater than 80.0°C.

Claim 23 (Previously Presented): A method of using a high-transparency plastic, comprising:

forming the high-transparency plastic according to Claim 17 into an optical lens.

Claim 24 (Previously Presented): An optical lens, comprising:

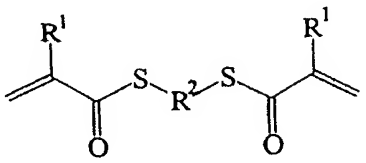
the transparent plastic according to Claim 17.

Claim 25-27 (Canceled):

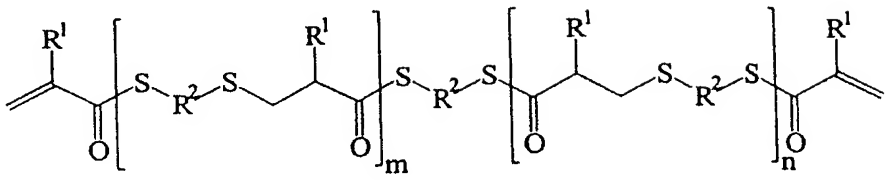
Claim 28 (New): A mixture for preparing a transparent plastic, comprising:

a) a prepolymer prepared from compounds of the formula (I) and (II) and

from alkyl dithiols or from polythiols



(I)



(II)

wherein

each R^1 is hydrogen or a methyl radical,

each R^2 is a linear or branched, aliphatic or cycloaliphatic radical, or a substituted or unsubstituted aromatic or heteroaromatic radical, and

each of m and n, is a whole number greater than or equal to 0, wherein

$m + n > 0$,

and

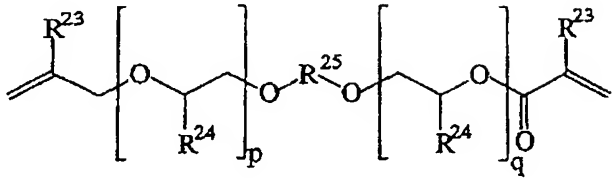
b) at least one monomer (A) capable of free-radical polymerization and having at least two methacrylate groups, and

c) aromatic vinyl compounds, and

d) a monomer selected from the group consisting of a monomer capable of free-radical polymerization and having at least two terminal olefinic groups whose reactivity differs,

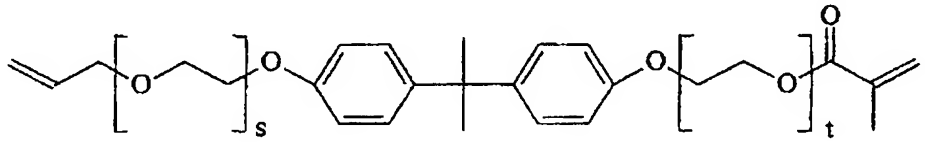
e) at least one ethylenically unsaturated monomer (B) and mixtures thereof; and

f) a monomer mixture capable of free-radical polymerization and having at least two terminal olefinic groups whose reactivity differs, which is a mixture of a monomer of formula (XIII) and a monomer of formula (XIVa):



(XIII)

wherein the residues R^{23} and R^{24} each independently of each other are a hydrogen or a methyl residue, and the residue R^{25} designates a linear or branched, aliphatic or cycloaliphatic divalent residue or a substituted or unsubstituted aromatic or heteroaromatic divalent residue, p and q are independently from 1 to 40; and



(XIVa)

wherein s and t are greater than or equal to zero and the sum s + t is in the range from 1 to 20.